THE INFLUENCE OF INTEREST RATE ON INVESTMENT LEVEL

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The fluctuation of economic thought on the importance and effectiveness of interest rate is an interesting phenomenon in itself. A cursory glance at the history of economic thought would reveal that economists and monetary authorities through out the 19th century and the first three decades of the 20th century had fastidious faith in the rate of interest as an effective instrument by which the volume of investment could be contracted or expanded. In the classical theories of production and prices rate of interest enters as a powerful autonomous parameter, which may be used to regulate expansions or contractions in business activity. The argument is quite simple: Changes in the rate of interest affect entrepreneurs' expenses on borrowed capital and thereby their net profit, which in turn decides their willingness to expand borrowing for investment.

Even today we find a number of adherents to this view although the emphasis has definitely shifted away from interest rate policy toward variations in public expenditures. The British White Paper on Employment, issued in May, 1944, for instance, explains the effect of interest rate policy on investments in the 'classical' model. 'If the cost of borrowing money is high, some projects which are not profitable at that rate will be held back. When it falls again, those projects will be brought forward and others will also be taken in hand.' Nevertheless, the paper does not lay much emphasis on the interest rate policy. For while it keeps 'the possibility of influencing capital expenditures by the variation of interest rates . . . . in view' it relies much more on public expenditures as a means of regulating investment and employment.

The role of interest rate as an anti-cyclical weapon was at its zenith around 1929-30. Skepticism arose from the apparent impotence of monetary measures to bring about the necessary adjustment in the economic activity from 1929 onwards. But this was a decade of conflicting experiences. For in the U.S.A. even though interest rates had fallen to very low levels, they never succeeded in averting the collapse of the early 30's or in restoring the normal economic activity later on. As Prof. Hansen remarked that it was something in the nature of a laboratory test, with very discouraging conclusions for monetary policy. But it had a slightly different effect in Great Britain where a more moderate decline in interest rates was succeeded by a

considerable improvement in investment activity. Of course, this could be attributed to so many reasons quite independent of interest rates. But however, it was believed that the famous British housing boom of the mid 30's at least was very much influenced by low interest rates.

It was this perhaps which prompted Keynes to regard interest rate as a major investment factor,[1] even though his attitude towards it was changed within a short span of five years between the publication of the 'Treatise on Money' and the appearence of the 'General Theory' in 1936.

In recent years, however, many writers on the subject expressed their doubt as to such an active role of interest rate, partly on the basis of practical experiences and partly on theoretical grounds. One of the most comprehensive numerical studies in this field have been made by Prof. J. Timbergen in his League of Nations works. Through his mathematical formulas he comes to the conclusion that variations in the rate of interest play one of a minor role, or no role at all, in the changes in investment activity.[2]

In earlier times, in spite of a fairly widespread faith in the effectiveness of the interest rate, there was no unanimity as to its modus operandi. The controversy was, whether it was chiefly through its effect upon the cost of short-term accommodation, or that of long-term investment or through its effects on some other factor? Each group of interest policy enthusiasts was able to bring strong arguments against the beliefs of rival groups. The leaders of these respective groups are found in the personalities of Mr. Hawtrey and Mr. Keynes respectively, one trying to disprove the other. But finally we will see that both of them being wrong or less convincing in their arguments. As if these were not sufficient, economists further worked out bewildering patterns of interest policies, with varying spreads of rates and subtle variations therein, which were more apt to give business-men a nervous breakdown than to guide their investment decisions.

Mr. R. G. Hawtroy emphasised the importance and effectiveness of the short-term interest rate, as against Keynes' long-term interest rate. Before the I World War in a book called *Good and Bad Trade*, he argued that the variations in the short-term rate of interest are the sole and sufficient causes of alterations of prosperity and depression and of good and bad trade. In his later works also he maintained the same position and has been maintaining it even today in spite of critical attacks. His theory of influence of the interest rate on inventories in the hands of wholesalers is well-known. The

[1] J. M. Keynes: 'An Open Letter to President Roosevelt'. *New York Times* December 31, 1933.

[2] J. Timbergen: *Statistical Testing of Business Cycle Theories.* (Geneva, 1939) Vol. I, p. 65.

wholesaler, Hawtrey says, 'makes his profit out of the difference between the price at which he buys and the price at which he sells, and the set off against his gross profit for insurance, rent, wages, etc., is quite small compared to the whole value of the goods. The set off on account of interest is therefore by no means unimportant.'[1] Since such parts of the inventories as are held with borrowed money give rise to interest payments, 'a sudden jump in a half year's interest from 2 to $3\frac{1}{2}$ per cent may well make a merchant hesitate to order a fresh consignment.' In consequence the manufacturer will find that fewer orders are coming in and he will cut down production.

This statement though logically correct ignores certain significant considerations. It is true that the trader's profits would be reduced if the interest rate rises, but it is not likely that he would at once cut down sales or raise prices especially when he knows that the rise in the short term interest rate is a temporary phenomenon. Firstly because, he may not know the real shape of his cost curve and consequently he may not be aware that if he reduces his sales the fall in his profit would be less than what it would if he maintains his original sales and secondly, the preservation of the goodwill of the customers is of a more important one than incurring some losses for a short period. For in the long run it will pay him good dividends. There is also another reason why traders generally do not reduce their stocks substantially with a rise in the interest rate. That is, each trader, by long experience and business calculations, will have established a certain ratio between the sales and the stocks at hand. Whatever may be the levels of interest they will try to maintain this ratio as far as possible.

Another phenomenon to be observed is that interest rates generally rise in periods when price levels are rising and are still expected to rise; and conversely, they fall when prices are falling and are still expected to fall. Under such circumstances interest rate policy will be a very meak determining factor. Supposing a business man expects the prices to rise by about 1 per cent over three months, even an increase in the rate of interest by 2 per cent or so will not deter him from increasing his stocks on the expectation of further rise in the price level. Therefore, the 'effect of an expected price rise in inducing an increase in inventories will, as a rule, be stronger than the effect of a rise in the interest rate in causing a decrease.'[2]

Beside, if the borrowed capital forms a minor portion of the total amount of capital invested in his business, even a substantial rise in the rate of interest will not prevent the trader from maintaining or increasing his stocks of goods.

[1] R. G. Hawtrey: *Currency and Credit* p. 25.

[2] F. A. Lutz: The Interest Rate and Investment in a Dynamic Economy. *American Economic Review*, Vol. XXXV, Dec. 1945, p. 813.

Mr. R. F. Harrod, in his book *Towards a Dynamic Economics*, examines the influence of short term and long term rates of interest and concludes that interest rate weapon has become obsolete. He rejects the Hawtrey doctrine about the sensitiveness of inventories to short term rate of interest and declares that not even a single Hawtreyite is to be found among businessmen. A rise in the interest rate cannot let the stocks fall below certain limits. A trader cannot afford not to meet the orders of his customers and thus to lose their goodwill for the sake of plus or minus half per cent. Thus Mr. Harrod says that 'the chorus of merchants and traders and producers have testified in the negative' to Hawtreyian views.[1]

J. M. Keynes, on the other hand, in his 'Treatise on Money' has analysed the effects of changes in the long term rate of interest. He particularly emphasised the power of the interest rate to upset the balance between savings and investment. The rate of interest affects both saving and investment, but its effects on saving were 'quantitatively small in practice especially over the short period.' The demand price of capital depended upon two things, according to Keynes: 'on the estimated net prospective yield from fixed capital... measured in money and on the rate of interest at which the future yield is capitalised.' Thus the connection between interest and investment is 'immediate, direct, and obvious.' He further argued that the capital market was so delicately and mechanically organised that it tended to accentuate the effects of interest rate movements, there being abnormal difficulty (if the rate rises) and abnormal ease (if the rate falls) for new borrowers to float their wares at a price approximately to the prices quoted in the market for existing loans.[2]

A natural corollary of this theoretical emphasis on the rate of interest as a regulative factor was the emphasis on central banking policy as a key to the regulation of prices, output and employment. This optimism is reflected in the report of the Macmillan Committee which characterised the Bank Rate as the most 'beautiful' and 'delicate' instrument in the hands of the central bank.

This general optimism about the effectiveness of the interest rate was shattered to pieces with the publication of Keynes' 'General Theory' in 1936, because of the novel way in which he defined 'interest' as the price which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash. So the rate of interest has no direct influence on the volume of saving and investment which, according to Keynes, are always equal. This made Keynes to lose faith in the efficacy of the rate of interest. He observes: 'We are still entitled to return to the latter (the rate of interest) as

[1] R. F. Harrod: Ibid., p. 118.

[2] J. M. Keynes: *A Treatise on Money*. Vol. I, pp. 200-209.

exercising, at any rate, in normal circumstances, a great, though not a decisive influence on the rate of investment. Only experience, however, can show how far management of the rate of interest is capable of continuously stimulating the appropriate volume of investment. For my own part, I am now somewhat sceptical of a merely monetary, policy directed towards the rate of interest.'[1] Formally Keynes theory justifies scepticism about monetary policy only in special circumstances. But Keynes himself and many Keynesians believed these circumstances to be typical of modern economies. So in his latter book, 'the rate of interest ceased to be the willing servant of the monetary authorities and become instead something like malevolent genie, whose refusal to shrink at their bidding tended to hold back investment.'

Mr. Harrod again, considering the influence of long term rate of interest, refers to an interesting article of G. L. S. Shackle entitled 'Interest Rate and the Pace of Investment'[2], in which Shackle has expressed serious doubts about the elasticity of demand for capital. Cassel, for instance, argued that the demand for capital would be inexhaustible at zero rate of interest. But this is not true, for the rate of interest cannot fall to zero[3]; it cannot fall, according to Keynes, below a conventional minimum of 2 per cent because of the liquidity premium attached to money. Moreover, demand for and supply of capital may respond slowly to changes in the rate of interest. Experience proves that the demand for long term capital in a decade following a change in interest rate shows greater responsiveness than immediately after the change. This is because factors of production (labour and capital) have a great degree of complementarity in the short period and a great degree of substitutability in the long period. It is not possible to make the long term rate to 'move up and down within the ambit of the cycle.'[4] It is possible to effect changes amounting to a fraction of 1 per cent but plans for long term capital outlay cannot respond to such minute changes.

[1] J. M. Keynes: *General Theory of Employment, Interest and Money*, p. 164.

[2] G. L. S. Shackle; Ibid., *Economic Journal*, Mar. 1946.

[3] F.N. In some quarters there has been serious discussion of the possibility of a zero long-term rate of interest (see Beveridge: *Full Employment in a Free Society* pp. 340-1). It is contended that if the long-term rate is mainly a risk premium, paid to overcome liquidity preference, then by eliminating this risk through complete stabilization of the bond market the authorities could bring the rate of interest close to zero. It is also felt that if people continued to court stagnation by trying to save more than the economy could invest, they should at least not be paid for doing so. But this is something basically contrary to the capitalistic economy where interest is the basic element of its most important institution.

[4] R. F. Harrod: Ibid., p. 120.

These theoretical conclusions about the inefficiency of interest rates (short or long term rates) to influence investment level, have found much justification in the conclusions drawn from practical investigations conducted by a group of Oxford economists. The results of the Oxford Inquiry were analysed by Messrs J. E. Meade and P. W. S. Andrews.[1] Their conclusions were negative in the sense that nearly 70-75 per cent of those who have answered denied that their investment decisions have been or were likely to be affected by changes in the interest rate in any way. It was found that there was practically complete agreement that investment in stocks and in fixed capital was not affected by short term rates of interest and the majority of the businessmen also denied that the long term rate of interest affected investment, although some considered that it had, or might have some importance.[2] Thus these replies appear to verify in a small degree the conclusions of the Hawtrey line of thought and also to verify in a small degree the Keynesian line of thought, however small the degree of confirmation might be.

Under the combined onslaught of adverse experience and critical analysis the defenders of interest rate were forced to retire into the relatively unexplored territory of long term investment. Even there, however, their position remained unsecure, because it was pointed out that over very long investment periods uncertainty tended to become so great as to obscure neat profit calculations based on money costs. The more distant the future date we look at, the more worthless is any guess as to what the market and other conditions will then be and therefore, the more heavily to be discounted for doubt. Mr. Shackle has shown that 'allowance for the hazards which beset the prospective earning career of many forms of equipment can easily render ineffective, as a stimulator, even a large proportionate change of the rate of pure interest'. He further says: 'If the problem we are to solve is held to consist of the question "what factor severely restricts the influence of interest rates on the pace of investment"? we answer that this factor is the allowance for doubt.'[3]

Similarly, Prof. Hicks has exploded the myth that interest rate has significant effects on investment. His argument is based upon the 'Increasing Risk Principle' of M. Kalecki.[4] The entrepreneurial planning of production depends upon risk as well as technical conditions.

[1] 'Summary of Replies to Questions on Effects of Interest Rates.' Oxford Economic Papers, No. 1, October 1938.

[2] P. W. S. Andrews: 'A Further Inquiry into the Effects of Rate of Interest.' Oxford Economic Papers, No. 3, February 1940.

[3] G. L. S. Shackle: 'Interest Rate and the Pace of Investment.' *Economic Journal*, Vol. LVI, Mar. 1946, p. 14.

[4] M. Kalecki: *Studies in the theory of Economic Fluctuations.*

An allowance should be made for risk from the most probable price of future output. If the length of planning period is great risk allowance should be great too. After a certain point risk allowance will become so strong as to wipe out any possible gains and prevents the plan from expanding. Even though in some cases the gains are not completely abolished by risk allowance, nevertheless, they are greatly weakened in their influence. So Hicks observes: 'Interest is too weak for it to have much influence on the near future; risk is too strong to enable interest to have much influence on the far future. What place is left for interest between these opposing perils?'[1]

Again, Prof. Lutz, discussing the influence of interest rate on the use of fixed equipment in the manufacturing process, says that in as much as interest enters into the construction costs, its effect is negligible, and in as much as it is used as a capitalization factor, a fall (rise) in the rate will raise (lower) the present value of the revenue from the machine[2] and accordingly the incentive to invest in them. But in a foot note he says: 'In using the capitalization procedure, account must be taken of the risk factor . . . by an appropriate treatment of the entrepreneur's expectations regarding the future revenue stream from the machine.' When this risk factor is taken into account, naturally the deciding factor becomes not the rate of interest but the future prospects of the revenue stream which in turn depends upon so many factors, quite independently of interest rate, in a dynamic economy. However, Prof. Lutz comes to the conclusion that in a dynamic world a change in the short term interest rate will not affect the calculations of a trader; a change in the long-term interest rate is not likely to influence investment decisions in manufacturing industry; and that under certain circumstances, a change in the long-term interest rate may affect investment decisions in the area of public utilities including rail roads and residential constructions.[3]

The above discussion gives out a clue to the factor or factors that influence the rate of investment independently of the rate of interest. The classical economists and those who think in their terms have tried to prove the efficacy of the interest rate under the assumptions of static conditions where other things remained the same and the future is quite certain. When once we make such an assumption as 'other things being equal', it is not difficult to conceive of an interest rate which is too effective in strict theory. But ours is a dynamic economy where 'other things' are not equal and will not remain equal. In fact these 'other things' may be

[1] J. R. Hicks: *Value and Capital*, p. 226.

[2] F. A. Lutz: 'The Interest Rate and Investment in a Dynamic Economy', *American Economic Review*. Vol. XXXV, Dec. 1945, p. 815.

[3] F. A. Lutz: Ibid., p. 830.

so important that they submerge the effect which the interest rate can be shown to have under static assumptions. A fall or rise in the rate of interest not counterbalanced by any simultaneous other changes, must be expected to increase or decrease the pace of gross investment in the system as a whole. But how can we insulate the economy from other changes taking place simultaneously?

One general mistake that most of us are likely to commit is to stress too much upon the rate of interest as a cost factor quite forgetting that it is, after all, only one of the cost factors (perhaps not one of great significance), and there are others and more important factors influencing costs and receipts. It is true that a high rate of interest, as it adds to the costs, may prevent making of certain investments. But in a dynamic economy, in most branches of manufacturing industry, there is a regular stream of technical inventions which widen the gaps between the costs of capital goods and the capitalised revenue imputable to them. Therefore, it seems improbable that a rise in the interest rate within the normal limits will act as an effective check on an expansion of investment induced by technical inventions.

Similarly, if the availability of abundant raw materials at low prices is discovered, or there is an improvement in the means of transport or if the productivity of the labourers can be increased, the cost of production will be reduced and even high rates of interest will not deter one from undertaking new investments in such fields. In fact there are a large number of unfulfilled investment opportunities which will gradually become feasible even at the higher rates through technological progress, internal capital accumulation and rising demand (an essential incentive to invest) for their products or services. Whenever investment opportunities are of the latter type, 'a lowering of rates will merely advance the day of their realization but will not add to the total.'[1]

Besides these even Governmental policies will influence investment levels. If the Government relaxes some of the tax policies, export and import policies and its labour policies, giving relief to the producers, even a considerable rise in the interest rate will have little effect on the investment decisions of the entrepreneurs. Moreover, it is needless to say that the rate of interest has got the least amount of influence on the economic enterprises undertaken by the Government in the public interest and we are all aware that the share of the Government in the economic field is becoming greater and greater in the recent times.

Thus it can be clearly shown that in most cases investment decisions are made mostly on the presence of a number of other

[1] Henry C. Wallich: 'The Changing Significance of the Interest Rate.' *American Economic Review.* Vol. XXXVI. Dec. 1946. p. 764.

determinant (non-monetary) factors, some of them are far more influential than the rate of interest, and as a consequence of which it became a factor not worth bothering about. In fact the efficiency of a weapon of monetary policy can be judged by the proportion by which it can change the total spending in a given period. As Mr. Sayers says: 'If its only effect is to cause one firm in every two or three hundred to make its investments different from what it otherwise would have been, the potency of that weapon in a constantly changing world must, I think, be described as very low.'[1]

But it has been argued by Mr. A. J. Brown[2] that the slightness of the initial response to monetary operations need not discourage our monetary managers. For the indirect effects of the initial stimulus through the process of acceleration will come to the rescue. But Mr. Sayers believes that this line of argument is unsound because, 'while it is true that an initial change in investment due to a change in monetary conditions will cause a greater eventual change in investment as market demands begin to rise, the same is true also of an initial change of investment due to any other cause.'[3] This explanation is sufficient to show the shallowness of Mr. Brown's argument and the importance of non-monetary factors in investment decisions.

In fact it is seriously doubted whether business fluctuations are a purely monetary phenomenon; whether it is not possible to have such fluctuations in the absence of variations in the interest rate? If the answer is positive what important place can we offer to the banking (interest) policy in checking such fluctuations? Because we have seen that the impulses to booms and slumps which can be set up by banking policy are likely to be no greater than those set up by many other extraneous factors some of which will be working one way and some another. Thus R. S. Sayers says: 'A boom or slump may occasionally be ended by banking policy, but I think our results point to the conclusion that the boom or slump is at least as likely to be ended by a budget statement, a dictator's brain storm, or a trade treaty. Or it may very likely be ended by the temporary glutting (or exhaustion) of important sections of the capital goods markets—i.e., by the boom (or slump) "wearing itself out".'[4]

The inefficiency of interest policy to influence investment decisions has been shown enough. Then what is the other most important factor (or factors) that influence the level of investment much? In a dynamic economy the demand for loans from industry and trade, reflecting the

[1] R. S. Sayers: 'Businessmen and the Terms of Borrowing.' Oxford Economic Papers. No. 3, Feb. 1940. p. 25.

[2] 'Interest, Prices and the Demand Schedule for Idle Money. Oxford Economic Papers. No. 2. p. 68-9.

[3] Ibid, p. 26. [4] Ibid., p. 27.

amount of investment which entrepreneurs are prepared to undertake depends on the expected rate of profit, which in turn depends on trade prospects in the future. If the future prospects seem good, entrepreneurs may want to borrow a good deal however high the interest rate may be. If they seem bad, no amount of fall in the interest rate will induce them to borrow at all as in times of depression and even if there are some who may want to borrow, they may not be able to borrow because the potential lenders doubt whether they will be able to repay.

It follows that if fluctuations in the trade prospects and unemployment are expected to be considerable, they may exert a predominant influence on the expected rate of profit and consequently on the volume of investment. Thus, in his introduction to the first Chapter (Profits, Interest and Investment) giving a revised version different from his earlier statements Prof. Hayek says: . . . . . 'I believe now that it is, properly speaking, a rate of profit rather than a rate of interest in the strict sense which is the dominating factor in this connection.'[1] The Oxford inquiry further substantiates our conclusion, to some extent, when it says that nearly as many as 13 businesses (among a large number who denied any significance to interest rate in their investment decisions) stated that interest rates would be, or were negligible by comparison with the profit expected from any investment and another 9 replies indicated that demand (i.e., trade prospects) conditions outweighed any other considerations.[2]

It may be argued that in times of increasing trade prospects when prices are rising and expected to rise, the prospective profit rates will be checked by a simultaneous rise in interest rates also, thus dampening the influence of profit expectations on investment. Though this argument is logically correct and the rate of interest is not quite as immobile and ineffective as we have thought it to be, its movements may yet be too tardy or too small to be effective. Because interest rate depends upon many institutional factors which are generally too slow to move rather than profits which depend upon so many extraneous factors as seen above. Therefore, the rate of interest cannot keep pace with the rate of profit and as such the rate of profit (or the business prospects) may still be the decisive factor. As Prof. Hayek observes: 'In fact movements of the rate of interest follow only at a distance behind the movements of the rate of profit, and if in addition the total amplitude of fluctuations in interest rate is much smaller than the amplitude of fluctuations in the rate of profit, the

[1] A. Von Hayek: Profit, Interest and Investment and other Essays on the Theory of Industrial Fluctuations. p. 3.

[2] P. W. S. Andrews: 'A Further Inquiry into the Effects of Rate of Interest.' Oxford Economic Papers. No. 3. Feb. 1940., p. 71.

rate of interest would indeed in many fields cease to be a major consideration in deciding investment policy.'[1]

The above discussion should not lead us to the extreme conclusion that interest rate is completely ineffective in influencing investment decisions and as such banking policy is utterly useless in dealing with economic fluctuations. In fact at times a properly managed interest rate policy will act as a sort of guide post to the entrepreneur about future prospects of business; at least it will have some psychological influence upon the investment decisions of the entrepreneur. But our aim here is to warn the policy makers not to depend too much upon interest policy as an efficient weapon to direct economic activity. It is too weak a weapon to counterbalance the powerful influence of the non-monetary factors that we have discussed above.

[1] Ibid., p. 67.